

Space Weather Forecast

Issued on Monday, 10 April 2023 at 01:27 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Chance of Moderate flares (R1-R2 Minor-Moderate radio blackouts) throughout.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low, with the most significant Common-class flare from a large, complex region in the southeast quadrant. There are three further simple sunspot regions on the visible disc. A number of recent eruptions have been modelled as being off the Earth-Sun line, but a recent eruption from the southwest quadrant will be analysed once further data becomes available.

Solar Wind / Geomagnetic Activity: Solar winds have fallen to background levels. Total magnetic field strength has been weak, with a slight rise to moderate strengths at the end of the period which could be the result of a CME arrival. The north-south component has varied weakly. Geomagnetic activity has been Quiet (Kp0-2).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background levels, with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary.

Solar Activity: Mainly Low with isolated Moderate levels of activity are expected, mainly due to a large and complex region in the southeast quadrant.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs, with a low possibility of a glancing blow either late on 11 or early on 12 Apr. A filament eruption from the southwest of the Sun late on 09 April will be analysed as further data becomes available. A CME may also affect the Earth early on 10 Apr based on recent observations. A fast solar wind is forecast to connect with Earth on 11 Apr, with slightly elevated speeds possible. Geomagnetic activity is expected to be mainly Quiet to Unsettled, with a slight chance of Active or G1/Minor Storms possible.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to remain at background levels, with no solar radiation storms occurring.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	5	10	5	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	30	30	30	30
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)